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CATALOGUE OF THE SNAKES OF NEBRASKA WITH
NOTES ON THEIR HABITS AND DISTRIBUTION.By W. EDGAR TAYLOR.¹

The author has published in the proceedings of the Nebraska State Board of Agriculture a complete catalogue of Nebraska serpents including notes and descriptions of the adults and young.² Since the preparation of this catalogue Prof. Cope's review of North American snakes has appeared.³ This together with the fact that the author has had time to review his own studies and add many other notes is sufficient excuse for offering the present catalogue.

In the classification we have followed Prof. Cope.⁴

The notes given are confined to the Ophidia or serpents of Nebraska. The range of the collection, which was quite a large one, included the whole State, and only specimens actually examined by the author are included. Typical specimens have been preserved.

1. CARPHOPHIOPS VERMIS Kenn.

Of the habits of this little snake, or of the young, we can say nothing, as we have secured but one specimen within the State. This one was captured at Peru, Nemaha county, by students of the State Normal School. This species is probably not rare, but is protected by its peculiar habits. Dr. Cooper mentions one specimen as collected in "Western Missouri" which term was probably applied to what is now the state of Nebraska.

2. OPHIBOLUS DOLIATUS COCCINEUS Schleg.

This is one of our prettiest snakes, very docile, not often even making an attempt at defense. It seems to feed largely on

¹State Normal School, Peru, Nebraska.

²Ophidia of Nebraska: Report of the Nebraska State Board of Agriculture, 1891. Hon. R. W. Furnas, Secretary.

³A Critical Review of the Characters and Variations of the Snakes of North America, by E. D. Cope. Proc. U. S. National Museum, 1892. Vol. XIV, pp. 589-694.

⁴Ibid.

insect larvæ and worms, though the fact that a young specimen thirteen inches in length contained in its stomach a young of *Storeria dekayi* six inches long is sufficient evidence of its disposition to devour other snakes. Many specimens have considerable resemblance to vars. *triangulus* and *gentilis*.

This species is generally distributed, very variable and somewhat common, though not abundant. We have examined specimens from Cuming, Nemaha and Red Willow counties.

3. OPHIBOLUS CALLIGASTER Say.

These snakes are quite abundant and similar in habits to *Pityophis sayi*. They are very quiet, often found around lumber, sidewalks, buildings, etc., where they go in search of their favorite food, such as mice, young gophers, etc. While we have found bird eggs, usually the eggs of the Towhee, Cowbird, Woodthrush, etc., indicating that these eggs were found on the ground, and other food in their stomachs, yet this snake feeds largely on destructive rodents. When frightened it often vibrates its tail similarly to the *Bascanium constrictor* and *P. sayi*.

We have examined specimens from Lancaster and Nemaha counties.

4. OPHIBOLUS GETULUS SAYI Holbrook.

We have seen but two specimens of this snake in Nebraska, one collected in Nemaha county and the other in Lancaster county. Mr. Lawrence Bruner informed the author that he collected a specimen near Kearney. This indicates a general distribution, though this species is probably at no point common.

5. DIADOPHIS PUNCTATUS Linn.

These little snakes are popularly known as young "Blue Racers," and, since they resemble the adult Racers more than the young of the latter do, this belief is not strange. This Ring-necked Snake is rather common and found, usually,

under rocks and in and around old logs and stumps. We have examined specimens from Cass and Nemaha counties.

We have not often been able to determine the contents of their stomachs but their food seems to be, principally, small larvæ, insects and their eggs, etc.

All our specimens possess seventeen rows of dorsal scales and Prof. Cragin reports the same for Kansas specimens.⁵

It would seem that Kansas and Nebraska specimens are peculiar in this respect.

6. *LIOPELTIS VERNALIS* DeKay.

We have examined only ten specimens of this species, all of which were collected in Cuming county by Mr. Lawrence Bruner and are now in the collections of the State University and the State Normal. Dr. Yarrow mentions one specimen taken at "Sand Hill" Nebraska.⁶ This species is probably not rare but is greatly protected by its color.

We can say nothing as to their food habits further than that they are probably insectivorous and vermivorous.

7. *BASCANIUM CONSTRICTOR* Linn.

The Blue Racer is our most active and agile serpent; is very abundant and is said to destroy Rattlesnakes. It has the same habit of climbing in bushes common to the Black Racer of the Eastern States. This act it performs seemingly for the purpose of basking, and also, probably, for hunting prey. We have never observed this snake in trees of any size, but have often seen it in bushes and underbrush. It seems to climb by extending its form in a skillful manner over a number of small branches in such away that its weight is distributed, thus enabling it to crawl over the smallest bushes such as the hazel.

This serpent is, also, our most daring species and is commonly believed to chase persons. This it probably does

⁵A Preliminary Catalogue of Kansas Reptiles and Batrachians by F. W. Cragin. Trans. Kan. Acad. Sci., 1879-80; Vol. VII., p. 120.

⁶All references to localities as given by Dr. Yarrow refer to his Check List, 1882.

through mere curiosity or owing to the temerity of the individual, as it invariably flees when given an opportunity. If forced to fight it often indicates its displeasure by rapidly vibrating its tail raised as in the case of the Rattlesnake. When in the leaves a perceptible noise may be made in this way. As is well known this snake is an enemy of numerous small birds, robbing their nests of the eggs or young and greatly frightening the mother bird.

A somewhat careful examination of the stomach contents of numerous specimens shows this snake to be a great insect destroyer, the most common insects found being the grasshopper, dragonfly, etc. Other snakes are also devoured in great quantities; the Eutæniæ being most frequently captured. In the case of eating other snakes their desires seem to be limited by ability to swallow only. We have found in some large specimens garter snakes not less than two feet long.

This species is common and well known all over the State. We have examined specimens from Brown, Cuming, Gage, Lancaster, Nemaha and other counties. Dr. Yarrow mentions specimens as collected at the following points: two from "Platte River," one from "Nebraska" and one from "Fort Kearney, Nebraska," and another from "Western Missouri" (Nebraska). Dr. Cooper also mentions collecting specimens in Nebraska but gives neither numbers nor localities.

BASCANIUM FLAGELLIFORME Catesby.

Mr. Garman gives the range of this snake as "Dakota to Texas and the Pacific Coast" and Dr. Yarrow mentions one specimen taken on "Platte River, Mo." (Nebraska). The extremely large collections we have had at our command would have enabled us to find this species if it were common. But as it is reported on excellent authority we include the species in our catalogue without numbering.

8. COLUBER VULPINUS Bd. and Gird.

We have collected but few specimens of this species, all these being from Nemaha county. Judging from its distribution in

adjoining States it may be found all over the State, but in small numbers. Mr. Garman gives the locality of the species as from "Massachusetts to Nebraska." The small number we have examined has not enabled us to determine the food of the species.

9. COLUBER OBSOLETUS OBSOLETUS Say.

This snake is, perhaps, our most noted and skillful climber, often being found on the limbs of the larger trees with head raised as if viewing the surrounding country. It is said to be due to this fact that it is called the pilot snake. It is one of our most docile serpents, and students have, by tying a string around its neck and thus retaining their captive for further observation, watched it climb the trees on the Normal School campus. This it accomplishes not wholly by winding around the tree, but by curving its body in various directions in order to support its graceful form on the rough projections of the bark. The cause of this wonderful success in climbing may be surmised when we are told that birds constitute its choice food. One large specimen contained in its stomach two fledglings of the downy woodpecker, (*D. pubescens*) large enough to fly, which the peculiar nesting habits of the mother bird had enabled the serpent to capture. However, mice and other rodents are frequently captured.

We have examined adult specimens from Nemaha county where the species is by no means rare, and the young from Nemaha and Lancaster counties. Dr. Yarrow mentions one specimen from "Western Missouri" which term at the time of making the collection, 1853 (?), probably was applied to what is now the State of Nebraska.

10. PITYOPHIS SAYI SAYI Schl.

This snake, the common western bull snake, is one of our commonest serpents and the largest species found within the State possibly excepting the *C. obsoletus*. They are found throughout the State; are comparatively docile unless attacked, when, although non-venomous, their great strength and

weight enables them to make a strong defense. We have often kept them for several days in our laboratory. In several instances when allowed to run at large in the room and after having disappeared for several days they were found snugly coiled away in some cupboard or drawer thought to have been out of their reach. When very much agitated and excited the tail is vibrated rapidly, similarly to the rattlesnake. When in a zinc tank about 2x2 feet these vibrations could be distinctly heard some ten or more feet from the tank. When forced to fight these snakes prefer to get against some object, or coil the body around some bush or stake when they can strike a blow sufficient to defend themselves against the attacks of an ordinary sized dog. However, they never fight as long as there is a show for escape as may be seen by tracing them on an open and almost grassless prairie.

The result of the examinations of the stomachs of these snakes shows that their food is almost wholly made up of rodents, most notably ground mice, but also including rats, gophers, squirrels, moles and similar animals. From an economic standpoint this is our most useful snake, destroying more destructive rodents than any other animal with which we are acquainted.

What meager notes we have on their breeding habits show them to be very prolific, thus accounting for the fact that they are still numerous, notwithstanding their wanton destruction in great numbers.

This species is very abundant all over the State. We have examined specimens from Brown, Dawes, Gage, Lancaster, Nemaha, Sarpy, Sheridan and other countries. Dr. Yarrow mentions one specimen as taken in "Nebraska" and three at "Fort Kearney, Neb."

11. *HETERODON PLATYRHINUS* Latreille.

These snakes are quite common, seemingly more frequent in eastern Nebraska. They feed almost wholly on insects, insect larvæ and worms, and are always found in a good condition—generally fat—and, furthermore, are certainly worthy of protection, being entirely harmless.

We have examined specimens from Cuming, Gage, Lancaster and Nemaha counties, and Dr. Yarrow reports one specimen from Nebraska. Seemingly displaced in western Nebraska by *H. nasicus nasicus*.

12. *HETERODON NASICUS NASICUS* Bd. and Gird.

These snakes are common in the middle and western part of the State, especially in the Sand Hills. We have examined specimens from Cuming, Dawes, Sheridan and Red Willow counties, and Dr. Yarrow mentions two specimens from Nebraska, four from the Platte River and one each from South Platte and the Sand Hills.

Food habits similar to *H. platyrhinus*.

13. *EUTÆNIA PROXIMA* Say.

The food of this snake consists mostly of insects and their larvæ, but also includes small fish, frogs, etc.

The species is common but nowhere abundant. We have examined specimens collected in Nemaha, Saline and Saunders counties.

14. *EUTÆNIA RADIX* Bd. and Gird.

This pretty snake is found all over the State and in food habits agrees with specimens of *E. sirtalis* of the same size. Earthworms and insect larvæ seem to constitute the bulk of its food.

We have examined specimens from Cuming, Dawes, Lancaster, Nemaha and Sheridan counties. Dr. Yarrow reports one specimen from Nebraska and another from Platte River, Mo. (Neb.).

Form *E. r. twiningii* is found over the whole State but is most typical in northwestern Nebraska.

15. *EUTÆNIA ELEGANS VAGRANS* Bd. and Gird.

The food habits are similar to other garters of their size. This variety is generally distributed but nowhere common.

We have collected specimens from Gage, Nemaha and Sheridan counties. Dr. Yarrow reports one specimen from North Platte, Neb., one from Platte River, Neb., and two from Nebraska.

16. *EUTÆNIA SIRTALIS SIRTALIS* Linn.

Food and other habits similar to var. *parietalis*.⁶

We have collected specimens from Brown, Dawes and Nemaha counties. Dr. Yarrow reports one specimen from Nebraska and another from Western Missouri (Nebr.).

16 a. *EUTÆNIA SIRTALIS DORSALIS* Bd. and Gird.

Food and habits similar to var. *parietalis*. Common in the western part of the State. Specimens were collected in Dawes and Sheridan counties.

Dr. Yarrow reports one specimen from Platte River, Mo. (Neb.).

16 b. *EUTÆNIA SIRTALIS OBSCURA* Cope.

Food and habits similar to var. *parietalis*. Common in the western part of the State; probably the most common variety in southwest Nebraska. We have examined specimens from Brown, Dawes and Sheridan counties. Dr. Yarrow mentions four specimens from Fort Kearney, Neb.; five from Platte River, Neb.; two from Nebraska; two from Missouri River, Neb.; one from Southern Platte, Neb.; four from Platte River, Neb.; three from Republican River, Kansas or Nebraska.

16 c. *EUTÆNIA SIRTALIS PARIETALIS* Say.

This variety is very common in eastern Nebraska but is largely displaced in the western part of the State by vars. *dorsalis* and *obscura*.

⁶Eight specimens which were supposed by us to represent vars. *sirtalis* and *parietalis* were classified by Prof. Cope as "*E. sirtalis sirtalis* an approach to *sirtalis parietalis* in red color tints." The author is inclined to believe that all Nebraska varieties of *E. sirtalis* should be classified as one, notwithstanding great variations. There are a number of forms but all intergrade so as to hardly allow even varietal distinctions.

The full grown specimens of this snake feed largely on frogs, their stomachs often containing two and even three specimens of the full grown leopard frog (*R. virescens*). On one occasion we observed a member of our excursion party immediately after capturing and encaging a large specimen of these garters make a test of its appetite. It voraciously and in succession swallowed three large specimens of the common leopard frog. The snake still seemed anxious for more frogs, but the cries of the latter and the pleading of the young ladies, members of the class, caused the said young man to cease his experiment.

A very peculiar feature of their food habits consists of the fact that specimens of this garter not exceeding two and one-half feet in length almost invariably contain within their stomachs specimens of the common earthworm. Often their stomachs are filled. Other varieties of this species as well as *E. radix* possess the same food proclivities. The manner of capturing these worms would certainly be interesting. We have examined specimens from Cuming, Nemaha and Saunders counties. Dr. Yarrow mentions one specimen from Republican River, Mo. (Nebr.).

17. NATRIX LEBERIS Linn.

This beautiful snake is one of our commonest serpents and is very abundant around sloughs and stagnant waters. We have more frequently found this specimen in muddy wet grounds than in the water. This fact, together with the shape of its body and head and the fact that crawfish seem to constitute its principal food has led the writer to think that perhaps this snake is an expert at pulling the crawfish out of the holes made by these forms. We have found as many as five and six crawfish in one stomach and have never found other substances excepting insect larvæ and masses indistinguishable.

We have examined specimens from Gage, Lancaster and Nemaha counties.

18. NATRIX FASCIATA SIPEDON Linn.

This snake is extremely sluggish, very ill-tempered and unpleasant to handle. Often when brought into our laboratory after being agitated they emitted a very offensive, strong odor which could be detected anywhere within the room. They are very abundant in streams and stagnant waters and are usually found in brush or drifts.

Our specimens are not the typical *sipedon*, but partake partly of the characteristics of both var. *rhombofer* and var. *erythrogaster*. We suspect that the same conditions are true of Kansas specimens since Prof. Snow reports var. *rhombofer* and Prof. Cope var. *erythrogaster*, while the species *sipedon* is also reported by various persons. The reputation of this species for variability is fully sustained in Nebraska—our collection showing specimens of all known shades and distinctness of markings. As in other sections of the country these snakes though harmless are commonly regarded as venomous.

We have examined specimens from Cuming and Nemaha counties. Dr. Yarrow reports one specimen from Nebraska.

The food of this serpent consists almost wholly of water insects and their larvæ, crawfish and fish, being the most fish-loving of all our species. Often the stomach is completely filled with parasitic worms which belong to the class of "round worms" (Nemathelminthes).

19. STORERIA DEKAYI Holbrook.

The contents of the stomachs of these little snakes indicate that they are almost wholly insectivorous. Furthermore the small numbers collected by amateurs, notwithstanding the fact that they are common, shows that their color is a great protection. Also their protective coloration is aided by the dilatation of the body and a disposition to remain very quiet until discovered, these three facts thus showing beyond question great powers of mimicry. Furthermore when the body is dilated the colors are made more grass-like by the exposure of the dingy, dirty edges of the dorsal scales.

We have examined some twelve or more specimens collected in Nemaha and adjoining counties.

20. CROTALOPHORUS CATENATUS CATENATUS Raf.

This massasauga or prairie rattlesnake is common in eastern and middle Nebraska though we have not found it in the extreme western part of the State. We have examined specimens from Gage, Lancaster and Nemaha counties, and Dr. Yarrow mentions one specimen as from Nebraska.

We have often kept this snake encaged in our laboratory but have never succeeded in getting them to eat. They seem to prefer to remain coiled in some dark corner of the cage seemingly awaiting an attack.

The contents of the stomachs of this species show that its food is almost wholly made up of mice and other rodents. Aside from well-known venomous qualities this snake has no bad habits and is decidedly useful. It is said that rats or mice will very soon disappear when the presence of this reptile is known. In at least one instance we have known this statement to be true. It was noticed that rats which a few days previous had been extremely numerous in a cellar had almost wholly disappeared. Within a few days the mystery was solved by finding a huge rattler in the doorway. These facts fully account for the frequent finding of the rattler around old cellars, buildings, etc., where they go to find their choice food.

21. CROTALUS CONFLUENTUS CONFLUENTUS Say.

This species was formerly abundant all over the State, but is now confined almost wholly to the middle and western part of the State, where they are by no means rare. We have examined specimens from Dawes, Hamilton and Sheridan counties. Dr. Yarrow mentions collections made at Pole Creek, Neb., Sydney, Neb., and Fort Kearney, Neb.

Their food habits are similar to *C. catenatus*. This is the species often found in or around the homes of the prairie dogs, where they are most abundantly found during the breeding season of the dogs.